

**Mingo Logan Coal Company
Mountain Laurel Complex
Mountaineer II Mine**

MSHA Belt Air Technical Panel

June 20 & 21, 2007



Why using belt air for face ventilation is necessary and safe

Three basic areas of underground mining are significantly improved by the use of belt air to ventilate the working faces:

- 1) Overall Mine Ventilation
- 2) Roof Control
- 3) Belt Inspection/Maintenance

Why using belt air for face ventilation is necessary and safe

Overall Mine Ventilation

- 1) The belt entries are not used for the primary escapeway in a mine. In addition, no more than 50% of the total intake air that is delivered to the working section can be supplied from the belt entry unless approved by the District Manager of MSHA. A separate isolated intake entryway is maintained as the primary escapeway in the mine.
- 2) The use of belt air for face ventilation results in more efficient ventilation and methane dilution in a mine. Usage of the belt entries for airways allows for additional fresh air to be brought into the mine as opposed to diverted intake air. It also reduces the possibility of methane build-up in the belt entries of a mine.
- 3) Carbon Monoxide monitoring, which enhances the notification in a thermal event, is used in the conveyor belt entries when belt air is used for face ventilation. Without CO monitoring, a fire could develop into a much more significant problem prior to knowledge of existence of the event.

Why using belt air for face ventilation is necessary and safe

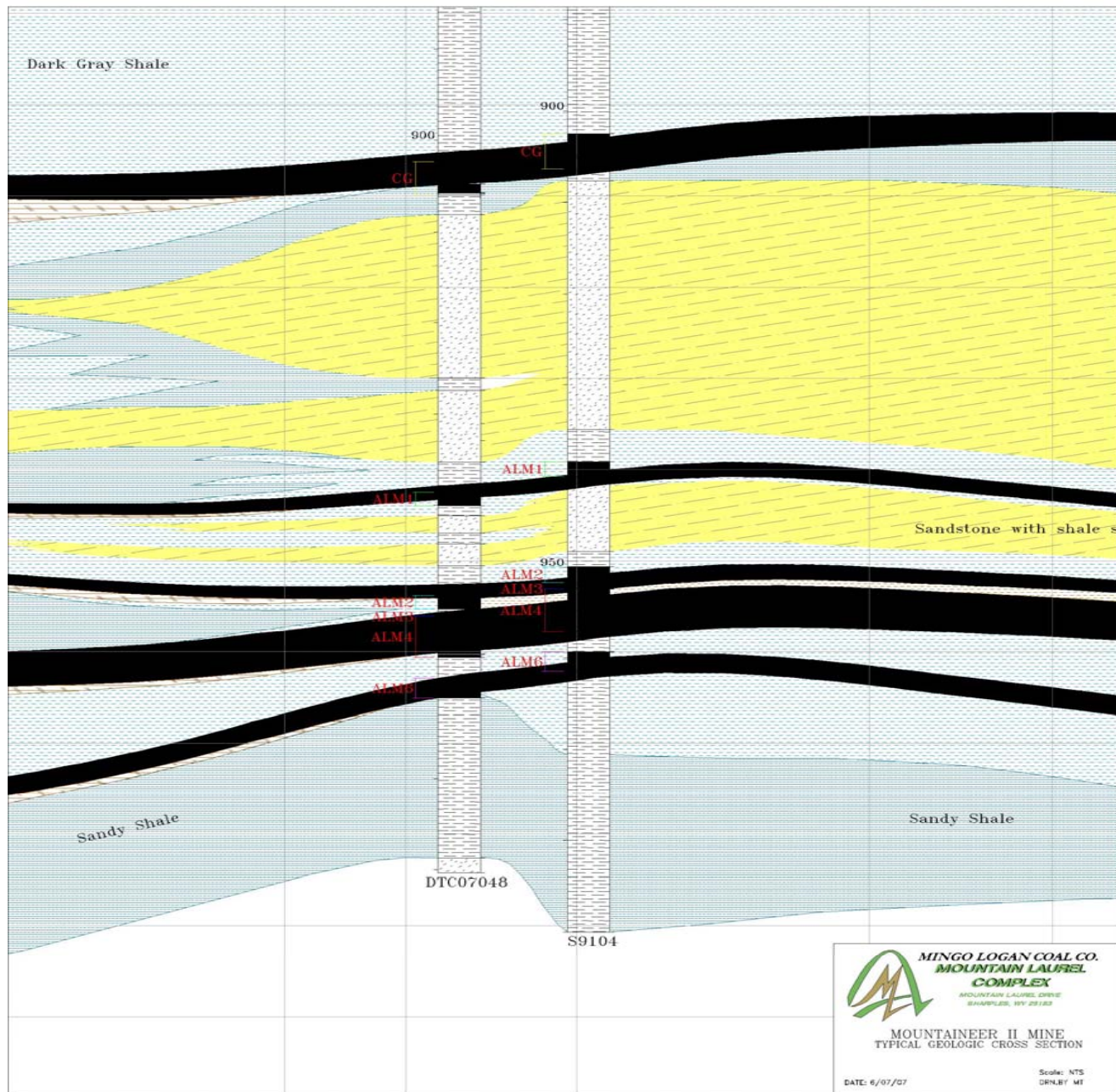


- 4) Continuous monitoring on the surface by a trained qualified person.
- 5) Audible and visual devices on all working sections to advise workers of increased CO levels.
- 6) Intake airways throughout the mine are also equipped with CO monitors from the surface to within 500' of all working sections.

Why using belt air for face ventilation is necessary and safe

Roof Control

- 1) As coal reserves are depleted, the industry taps into more challenging reserves. These reserves tend to have geologic challenges which include: deeper cover, overmining, undermining, rider seams, weaker roof and floor, etc. To combat these issues, it becomes necessary to develop fewer entries(2-3 entries in many circumstances) with larger pillars and narrower entries.
- 2) To achieve the required volume of air to dilute methane and other explosive/harmful gases, and sweep away dust from cutting and drilling operations while developing a limited number of entries, it is necessary to utilize the belt entry as an intaking aircourse.



Why using belt air for face ventilation is necessary and safe

Roof Control(cont.)

- 3) Without the usage of belt air for face ventilation, more overcasts and rockwork would be required for the mine ventilation system. This increases the exposure to hazards associated with explosives and the dangers of working rock.

Why using belt air for face ventilation is necessary and safe

Belt Inspection/Maintenance

- 1) The belt entry is often common with the track entry when belt air is used for intake face ventilation. This access allows for easy inspection, early detection of problems in the track entry and belt entry, easier cleaning of the belt entryway, efficient entry rock dusting, and more efficient belt conveyor maintenance. Without the use of the belt entry for intake face ventilation, these practices would be compromised and it could result in less efficiency in the maintaining of the systems and increased employee injuries from the limited access.
- 2) A fire could develop to a much larger crisis prior to knowledge of the event if it is isolated from the other entries.

TYPICAL BELT AIR CALCULATION

50 FPM x 7' x 19' = 6650 CFM
Used for Methane and Dust Dilution

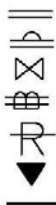
BELT TAILPIECE

BELT DISCHARGE

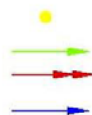
4LT

LEGEND

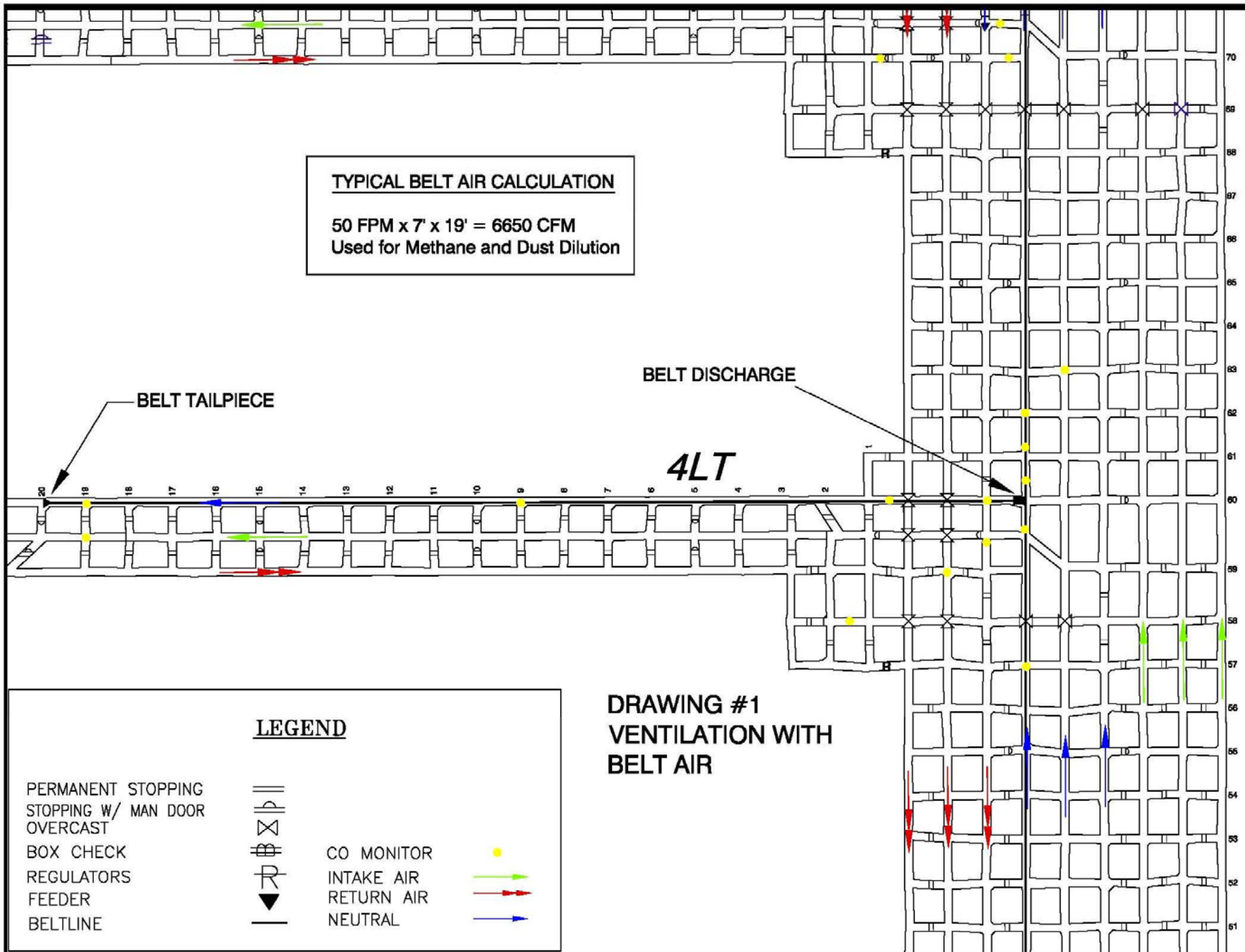
PERMANENT STOPPING
STOPPING W/ MAN DOOR
OVERCAST
BOX CHECK
REGULATORS
FEEDER
BELTLINE



CO MONITOR
INTAKE AIR
RETURN AIR
NEUTRAL



DRAWING #1 VENTILATION WITH BELT AIR



TYPICAL BELT AIR CALCULATION

50 FPM x 7' x 19' = 6650 CFM
Used for Methane and Dust Dilution
No Longer Available

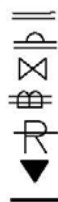
BELT TAILPIECE

BELT DISCHARGE

4LT

LEGEND

PERMANENT STOPPING
STOPPING W/ MAN DOOR
OVERCAST
BOX CHECK
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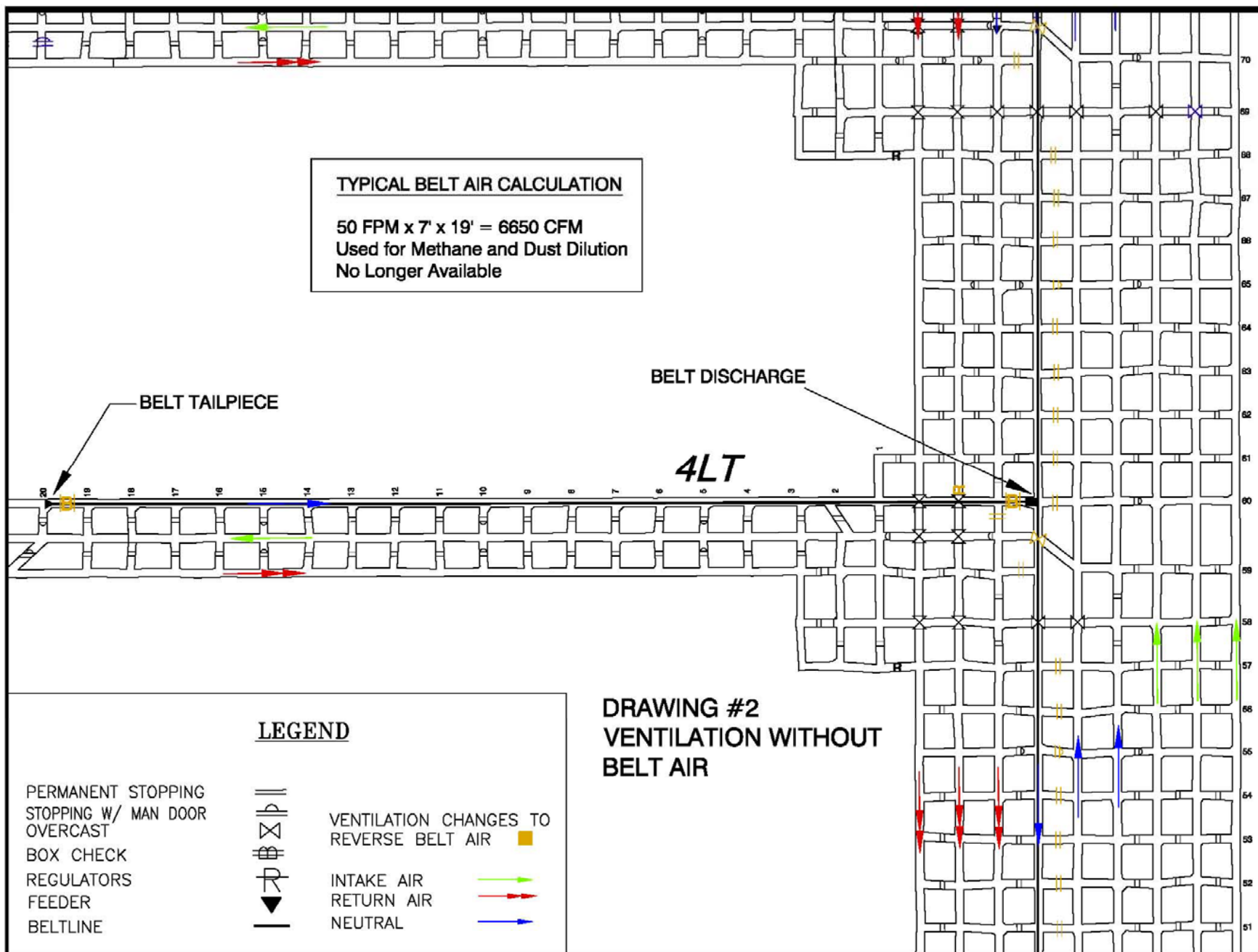


VENTILATION CHANGES TO
REVERSE BELT AIR

INTAKE AIR
RETURN AIR
NEUTRAL



DRAWING #2 VENTILATION WITHOUT BELT AIR



Why using belt air for face ventilation is necessary and safe

Miscellaneous

The engineering and development have already been done in many existing and developing mines. Most well engineered mines incorporated the safe, efficient usage of belt air for face ventilation in the mining plans. Some mines just could not incorporate the less efficient ventilation system into the existing infrastructure. If the usage of belt air for face ventilation is no longer allowed, it could result in the temporary or permanent idling of some mines.